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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,491	08/21/2006	Joseph P. Kennedy JR.	GRA26 019US	8445

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EXAMINER	
GESESSE, TILAHUN	

ART UNIT	PAPER NUMBER
2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/556,491	KENNEDY ET AL.	
	Examiner	Art Unit	
	Tilahun B. Gesese	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *23* is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1- 2,4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Kennedy Jr. (US 5,465,289).

Claim 1,Kennedy Jr. teaches a wireless communication system (see figure 1, traffic monitoring system using sensors installed in , on or near roadways, such as magnetic sensors , infrared radiation sensors, or radar sensors, see col. 1, lines 25-35) having a plurality of base stations, (cellular tower 4) for communication with one mobile appliances (mobile unit 12), and a network overlay geo-location system having a plurality of wireless location sensors (2) for providing location measurements, (movement of traffic in coverage 6 and 8, see col.2, lines 13-28 and fig.1).

Kennedy Jr. teaches one of the plurality of wireless location sensors (2) are geographically separated from one of the plurality of base stations (4) served by the one wireless location sensors(2), and wherein the wireless communication system includes a sparse network overlay geo-location system (see col.2, lines 18-24, col. 3, lines 20-32 and fig.3) in which traffic monitor system figure 1, sparse coverage area 8 for each cellular tower 4 with traffic monitoring

sensors (2) see figure 1, spares coverage areas).

Claim 2, Kennedy Jr. teaches the plurality of base stations (cell sites or cellular tower 4 of figure 1) is greater than the plurality of wireless location sensors (sensors 2 with coverage areas see figure 1), see figure 1, in which cell site 4 are greater than the sensors (2).

Claim 4, Kennedy Jr. teaches a wireless communication system (see figure 1, traffic monitoring system using sensors installed in , on or near roadways, such as magnetic sensors , infrared radiation sensors, or radar sensors, see col. 1, lines 25-35) having a plurality of base stations, (cellular tower 4) for communication with one mobile appliances (mobile unit 12), and a network overlay geo-location system having a plurality of wireless location sensors (2) for providing location measurements, (movement of traffic in coverage 6 and 8, see col.2, lines 13-28 and fig.1).

Kennedy Jr. teaches one of the plurality of wireless location sensors (2) are geographically separated from one of the plurality of base stations (4) served by the one wireless location sensors(2), and wherein the wireless communication system includes a sparse network overlay geo-location system (see col.2, lines 18-24, col. 3, lines 20-32 and fig.3) in which traffic monitor system figure 1, sparse coverage area 8 for each cellular tower 4 with traffic monitoring sensors (2) see figure 1, spares coverage areas).

Claim 5, Kennedy Jr. teaches one of the plurality of wireless location sensors are positioned at high elevations (see figure 2, item # 10).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3,6-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenney in view of Fischer et al (US 6,295,455).

Claims 3,6 Kennedy Jr. teaches a geographic area served by a wireless communication system (see figure 1) having a sparse network overlay geo-location system (see fig.1, coverage 6) in which a primary wireless location sensor (2) associated with a serving base station (4) provides information about a signal received from a mobile appliance (12) to another wireless location sensor as to enable the another wireless location sensors to measure an attribute of the signal, (see figure 1, traffic monitoring system using sensors installed in , on or near roadways, such as magnetic sensors , infrared radiation sensors, or radar sensors, see col. 1, lines 25-35) a method of locating the mobile appliance independently from the primary wireless location sensor (see col. 3, lines 20-32 and fig.3) in which traffic monitor system figure 1, sparse coverage area 8 for each cellular tower 4 with traffic monitoring sensors (2) see figure 1, spares coverage area).

Kennedy Jr. differs in teaching performing ambiguity function processing using known data sequences in the signal and the signal received at the another wireless location and measuring an attribute of the signal at the another wireless location and, estimating the location of the mobile appliance based at least in part by measured attribute. However, Fischer teaches performing ambiguity function processing using known data sequences in the signal and the signal received at the another wireless location and measuring an attribute of the signal

at the another wireless location and, estimating the location of the mobile appliance based at least in part by measured attribute (see abstract , col. 5, lines 35-56, col.6, lines 11-37, ,col. 6, line 62-col. 7,line 11, col.7 lines 65-col.8, line 15, col.9, lines 15-29, col.10, lines 16-39, col.10,lines 40- col.11, line 36).

One of ordinary skill in the art recognizes the known method of processing data sequences of received signal and measure an attribute of signal based on quality , arrive of time and angle of arrival ,in order to determine the unknown location of mobile device, in order to avoid the degrading quality of the communication in progress (see col. 1, lines 15-19).

Claim 7, Fischer teaches retrieving the known data sequences in the target signal from an Abis monitoring unit (see figure 1, item 15-15K) .

Claim 8, Fischer teaches the known data sequences are predetermined training Sequences (see col.9, lines 15-29).

Claim 9,17, Kennedy Jr. teaches a geographic area served by a wireless communication system (see figure 1) having a sparse network overlay geo-location system (see fig.1, coverage 6) in which a primary wireless location sensor (2) associated with a serving base station (4) provides information about a signal received from a mobile appliance (12) to another wireless location sensor as to enable the another wireless location sensors to measure an attribute of the signal, (see figure 1, traffic monitoring system using sensors installed in , on or near roadways, such as magnetic sensors , infrared radiation sensors, or radar sensors, see col. 1, lines 25-35) a method of locating the mobile appliance independently from the primary wireless location sensor (see col. 3, lines 20-32 and fig.3) in which traffic monitor system figure 1, sparse coverage area 8 for each cellular tower 4 with traffic monitoring sensors (2) see figure 1, spares coverage area).

Kennedy Jr. differs in teaching performing ambiguity function processing using known data sequences in the signal and the signal received at the another wireless location and measuring an attribute of the signal at the another wireless location and, estimating the location of the mobile appliance based at least in part by measured attribute. However, Fischer teaches performing ambiguity function processing using known data sequences in the signal and the signal received at the another wireless location and measuring an attribute of the signal at the another wireless location and, estimating the location of the mobile appliance based at least in part by measured attribute (see abstract , col. 5, lines 35-56, col.6, lines 11-37, ,col. 6, line 62-col. 7,line 11, col.7 lines 65-col.8, line 15, col.9, lines 15-29, col.10, lines 16-39, col.10,lines 40- col.11, line 36).

One of ordinary skill in the art recognizes the known method of processing data sequences of received signal and measure an attribute of signal based on quality , arrive of time and angle of arrival ,in order to determine the unknown location of mobile device, in order to avoid the degrading quality of the communication in progress (see col. 1, lines 15-19).

Claim 10, Fischer teaches the location surface determined as a function of the speed of the mobile appliance is defined by a high speed highway (see col.11, line 65-col. 12, line 4).

Claim 11, Fischer teaches the speed of the mobile appliance is determined by differential Doppler (see col. 11, line 65-col. 12, line 4).

Claim 12, Fischer teaches the transmitted power of the signal is provided by an Abis monitoring unit (See col.7, lines 64-col.8, line 15).

Claim 13, Fischer teaches a propagation range of the second signal is greater than a propagation range of the signal (see col. 7, line 64-col. 8, line 15).

Claims 14,18, Fischer teaches the EOTD data is provided by an Abis

monitoring unit (see col.11, line 64-col. 12, line 15).

Claims 15-16, Fischer teaches the selection is based on a predetermined criteria (see col.11, line 64-col. 12, line 15).

Claim 19, Kennedy Jr. teaches a wireless communication system (see figure 1, traffic monitoring system using sensors installed in , on or near roadways, such as magnetic sensors , infrared radiation sensors, or radar sensors, see col. 1, lines 25-35) having a plurality of base stations, (cellular tower 4) for communication with one mobile appliances (mobile unit 12), and a network overlay geo-location system having a plurality of wireless location sensors (2) for providing location measurements, (movement of traffic in coverage 6 and 8, see col.2, lines 13-28 and fig.1).Kennedy Jr. teaches one of the plurality of wireless location sensors (2) are geographically separated from one of the plurality of base stations (4) served by the one wireless location sensors(2), and wherein the wireless communication system includes a sparse network overlay geo-location system (see col.2, lines 18-24, col. 3, lines 20-32 and fig.3) in which traffic monitor system figure 1, sparse coverage area 8 for each cellular tower 4 with traffic monitoring sensors (2) see figure 1, spares coverage areas).

Kennedy Jr. differs in teach obtaining a set of candidate measurement data selected from the group of signal strength, timing advance ; comparing the set of candidate measurement data with a set of predetermined measurement data; and, determining the location of the mobile appliance based on the comparison. However, Fischer teaches obtaining a set of candidate measurement data selected from the group of signal strength, timing advance ; comparing the set of candidate measurement data with a set of predetermined measurement data; and, determining the location of the mobile appliance based

on the comparison (see col. 6, lines 11-37 in particular col.9, lines 15-29)in which increase or decrease in length as needed. One of ordinary skill in the art to compare and increase or decrease delay time in order to avoid degraded communication channel.

Claim 20, Fischer teaches the multi-path signature is a function of one of the group comprising power, delay, frequency and angle (see col. 9, lines 15-29).

Claim 21-22, Fischer teaches the predetermined measurement data is empirical data and the predetermined measurement data is based on theoretical propagation data (see col. 15-30 and lines 54-col. 10, line 11).

Allowable Subject Matter

6. Claim 23 is allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tilahun B. Gesesse whose telephone number is 571-272-7879. The examiner can normally be reached on flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Anderson can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

June 26, 2008
T.B.G

Tilahun B Gesesse
Primary Examiner
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